

IN THE CLAIMS:

Please delete Claims 5, 10, 15, 19, 30 and 33 without prejudice.

Claim 1 (Original) A training device for use in practicing the correct positioning of an electrical apical locator comprising:

- a) a support structure having a cavity;
- b) a tooth having a root canal and being located partially in said cavity so that a crown of said tooth is exposed and a root of said tooth is received in said support structure cavity during usage;
- c) a matrix securely holding said tooth in a fixed position in said support structure cavity; and wherein
- d) at least a portion of said matrix in the region of a tip of said root is an electrically conductive medium selected to impart an impedance that approximates an impedance associated with normal human tissue surrounding a root of a live tooth.

Claim 2 (Original) The device according to Claim 1 wherein:

- a) said support structure is an open topped enclosure suitable for holding by a user during usage.

Claim 3 (Original) The device according to Claim 1 wherein:

- a) said support structure is a manikin device  
simulating a human jaw with the tooth mounted in  
said jaw.

Claim 4 (Original) The device according to Claim 3 wherein:

- a) said jaw is a first jaw and said manikin includes  
a second articulated jaw.

Claim 5 (Canceled)

Claim 6 (Currently Amended) The device according to Claim 5 35  
further including:

- a) a pin operably extending between the manikin  
socket and sleeve so as to secure said sleeve in  
said socket.

Claim 7 (Original) The device according to Claim 6 wherein:

- a) said pin is a thumb screw having a head adapted to  
receive a connector of an apical position locator  
electrode; said head being exposed during use and  
an opposite end of said screw being sized and  
shaped to engage said conductive medium.

Claim 8 (Original) The device according to Claim 1 wherein:

- a) all of said matrix is conductive medium.

Claim 9 (Original) The device according to Claim 1 wherein:

- a) said conductive medium is a first highly conductive matrix component that is located only in the vicinity of said root and a remainder of said cavity is filled with a second matrix component that is less electrically conductive than said first component.

Claim 10 (Canceled)

Claim 11 (Original) The device according to Claim 3 wherein:

- a) said manikin is at least partially electrically conductive between said device and a location for attachment to an apical locator.

Claim 12 (Original) The device according to Claim 1 in combination with:

- a) an apical locator having a probe for insertion into said tooth root canal and an electrode adapted to be placed in electrical connection with said electrically conductive medium.

Claim 13 (Original) A teaching device for training dental students to locate a root canal apex in a tooth with an apical position locator; said device comprising:

- a) a manikin having at least one jaw that simulates a human jaw;
- b) said jaw having at least one socket therein located whereat a human tooth would be located in a human jaw;
- c) a tooth operably positioned in said socket such that a crown of said tooth extends outward from said socket and a root of said tooth is located in said socket; and
- d) a matrix securing said tooth in said socket; at least a first component of said matrix surrounding an apex of said tooth root being sufficiently electrically conductive so as to simulate the electrical conductance in human tissue surrounding a live tooth.

Claim 14 (Original) The device according to Claim 13 wherein:

- a) said jaw is a first jaw and said manikin has a second jaw articulated with said first jaw.

Claim 15 (Canceled)

Claim 16 (Currently Amended) The device according to Claim ~~15~~ 37 including:

- a) a pin to operably secure said matrix sleeve in said socket.

Claim 17 (Original) The device according to Claim 16 wherein:

- a) said pin is sized and positioned to have a tip end thereof engage said matrix first component and an opposite end adapted to be operably connected to a lead of an apical position locator.

Claim 18 (Original) The device according to Claim 13 wherein:

- a) said first component is located only in close proximity to an apex of the tooth root.

Claim 19 (Canceled)

Claim 20 (Original) The device according to Claim 13 wherein:

- a) said matrix is essentially entirely composed of said first component.

Claim 21 (Original) The device according to Claim 13 wherein:

- a) said first component of said matrix includes at least 5% water by weight.

Claim 22 (Original) The device according to Claim 13 wherein:

- a) said first component of said matrix includes conductive metallic salt selected from the salts consisting essentially of sodium salts, calcium salts and mixtures thereof.

Claim 23 (Original) The device according to Claim 13 wherein:

- a) said first component of said matrix has a volume resistivity in the range from  $10^{15}$  to  $10^{-3}$  ohm/cm.

Claim 24 (Original) The device according to Claim 13 including:

- a) an apical position locator probe operably connectable to an apical locator device; said probe having a metallic central core with an exposed tip and having a shank covered by a non-conducting material.

Claim 25 (Original) A teaching device for training dental students to locate a root canal apex in a tooth with an apical position locator; said device comprising:

- a) a manikin having at least one jaw that simulates a human jaw;
- b) said jaw having at least one tooth that has said jaw molded thereabout and being located whereat a human tooth would be located in a live human jaw;
- c) said tooth being operably positioned such that a crown of said tooth extends outward from said jaw and a root of said tooth is located in said jaw; and
- d) a matrix having a first component surrounding an apex of said tooth root and being sufficiently electrically conductive so as to simulate the electrical conductance in human tissue surrounding a live tooth; said matrix first component being adapted to be operably conductively connected to such an apical position locator.

Claim 26 (Currently Amended) A dental teaching aid comprising:

- a) a support structure having a generally planar insert support plate;
- b) a plurality of inserts wherein each insert ~~fits~~ is

received modularly on said support structure  
support plate and in abutting relationship to each  
adjacent insert;

- c) each insert mimics a portion of a human jaw; and
- d) each insert provides structure thereon that allows a dental student to practice at least one dental procedure.

Claim 27 (Original) The training aid according to Claim 26  
wherein:

- a) one of said inserts provides training in crown and bridge procedures and includes an artificial skin for teaching a student to interface a bridge with such skin.

Claim 28 (Original) The training aid according to Claim 26  
wherein:

- a) one of said inserts provides training in the repair of dental decay and provides at least one opening for receiving a tooth in a ligament mimicking matrix.



Claim 29 (Original) The training aid according to Claim 26  
wherein:

- a) one of said inserts provides training structures  
for conducting root canals.

Claim 30 (Canceled)

Claim 31 (Currently Amended) The training aid according to Claim  
~~30~~ 39 wherein:

- a) said electrical conductor comprises a metal plate  
positioned to operably engage all of said inserts.

Claim 32 (Original) The training aid according to Claim 29  
wherein:

- a) said support includes a first of a tongue and a  
slot pair;
- b) each of said inserts includes a second of the  
tongue and slot pair; all of said tongues and  
slots being respectively positioned such that each  
of said tongue and slot pairs mate when said  
inserts are placed on said support so as to  
stabilize said inserts.

Claim 33 (Canceled)

Claim 34 (Original) The training aid according to Claim 29  
wherein:

- a) each of said inserts is interchangeable with other inserts having training structure therein for other procedures such that the inserts may all be assembled on a single support and configured for the same procedure or for different procedures.

Claim 35 is prior Claim 5 rewritten independently.

Claim 35 (New) A training device for use in practicing the correct positioning of an electrical apical locator comprising:

- a) a support structure having a cavity;
- b) said support structure is a manikin device simulating a human jaw with the tooth mounted in said jaw;
- c) said cavity is a socket sized and positioned in said manikin at a location whereat a tooth would be located in a human jaw;
- d) a tooth having a root canal and being located partially in said cavity so that a crown of said tooth is exposed and a root of said tooth is

received in said support structure cavity during usage;

- e) a matrix securely holding said tooth in a fixed position in said support structure cavity;
- f) a sleeve operably snugly received in said socket; said tooth and said matrix being located within said sleeve; and
- g) at least a portion of said matrix in the region of a tip of said root is an electrically conductive medium selected to impart an impedance that approximates an impedance associated with normal human tissue surrounding a root of a live tooth.

Claim 36 is prior Claim 10 rewritten independently.

Claim 36 (New) A training device for use in practicing the correct positioning of an electrical apical locator comprising:

- a) a support structure having a cavity;
- b) a tooth having a root canal and being located partially in said cavity so that a crown of said tooth is exposed and a root of said tooth is received in said support structure cavity during usage;
- c) a matrix securely holding said tooth in a fixed

- position in said support structure cavity;
- d) at least a portion of said matrix in the region of a tip of said root is an electrically conductive medium selected to impart an impedance that approximates an impedance associated with normal human tissue surrounding a root of a live tooth;
  - e) said conductive medium is a first highly conductive matrix component that is located only in the vicinity of said root and a remainder of said cavity is filled with a second matrix component that is less electrically conductive than said first component; and
  - f) a root sleeve sized and shaped to surround said first component and a tooth root apex, so as to hold said first component in position.

Claim 37 is prior Claim 15 rewritten independently.

Claim 37 (New) A teaching device for training dental students to locate a root canal apex in a tooth with an apical position locator; said device comprising:

- a) a manikin having at least one jaw that simulates a human jaw;

- b) said jaw having at least one socket therein located whereat a human tooth would be located in a human jaw;
- c) a tooth operably positioned in said socket such that a crown of said tooth extends outward from said socket and a root of said tooth is located in said socket;
- d) a matrix securing said tooth in said socket; at least a first component of said matrix surrounding an apex of said tooth root being sufficiently electrically conductive so as to simulate the electrical conductance in human tissue surrounding a live tooth; and
- e) a matrix sleeve adapted to be snugly received in said socket and to receive said matrix and tooth within.

Claim 38 is prior Claim 19 rewritten independently.

Claim 38 (New) A teaching device for training dental students to locate a root canal apex in a tooth with an apical position locator; said device comprising:

- a) a manikin having at least one jaw that simulates a human jaw;

- b) said jaw having at least one socket therein located whereat a human tooth would be located in a human jaw;
- c) a tooth operably positioned in said socket such that a crown of said tooth extends outward from said socket and a root of said tooth is located in said socket;
- d) a matrix securing said tooth in said socket; at least a first component of said matrix surrounding an apex of said tooth root being sufficiently electrically conductive so as to simulate the electrical conductance in human tissue surrounding a live tooth;
- e) said first component is located only in close proximity to an apex of the tooth root; and
- f) a tooth root sleeve sized and shaped to surround and protect said matrix first component and said tooth root apex during usage.

Claim 39 is prior Claim 30 rewritten independently.

Claim 39 (New) A dental teaching aid comprising:

- a) a support structure having a generally planar support plate;

- b) a plurality of inserts wherein each insert fits modularly on said support plate support structure and in abutting relationship to adjacent inserts;
- c) each insert mimics a portion of a human jaw;
- d) each insert provides structure thereon that allows a dental student to practice at least one dental procedure;
- e) one of said inserts provides training structures for conducting root canals; and
- f) said support includes an electrical conductor that is adapted to electrically contact said root canal insert so as to conduct electricity between a lower end of a root of a tooth and said conductor.

Claim 40 is prior Claim 33 rewritten independently.

Claim 40 (New) A dental teaching aid comprising:

- a) a support structure having a generally planar support plate;
- b) a plurality of inserts wherein each insert fits modularly on said support plate support structure and in abutting relationship to adjacent inserts;
- c) each insert mimics a portion of a human jaw;
- d) each insert provides structure thereon that allows

a dental student to practice at least one dental procedure;

- e) one of said inserts provides training structures for conducting root canals;
- f) each of said inserts includes an inward facing lip; and including
- g) a plate that operably overlaps each insert lip and is securable to said support so as to lock said inserts to said support.